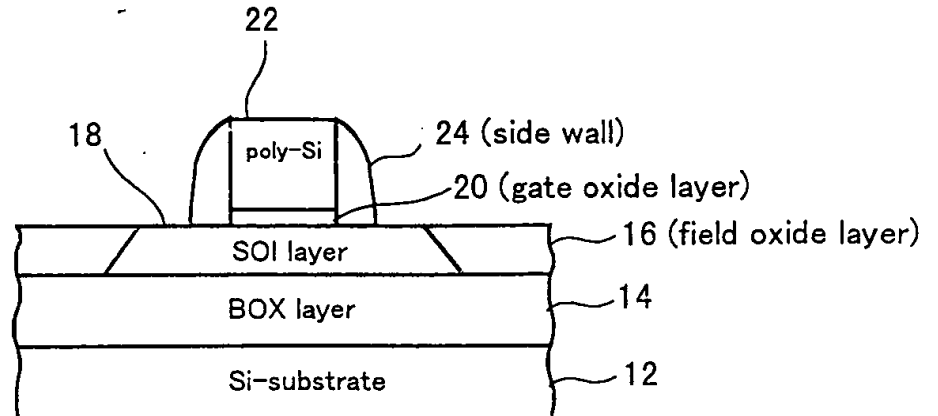
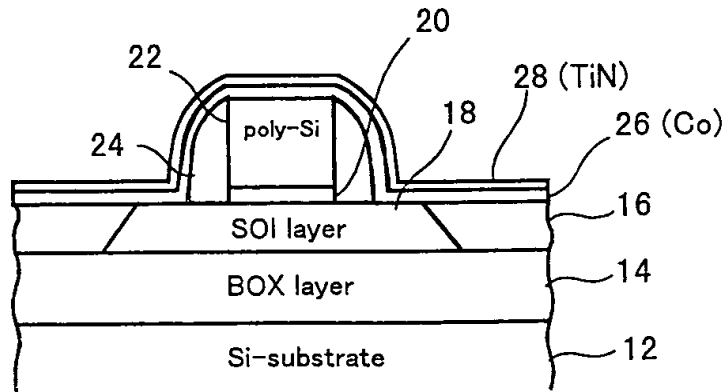


**FIG. 1A**  
(PRIOR ART)



↓ Sputtering  
(TiN, Co)

**FIG. 1B**  
(PRIOR ART)



↓ 1st & 2nd RTA

**FIG. 1C**  
(PRIOR ART)

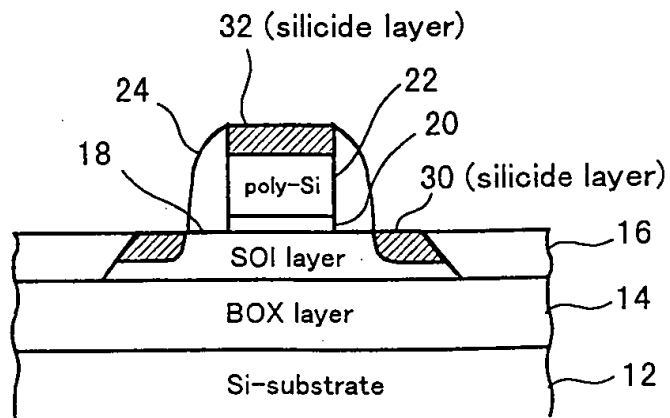
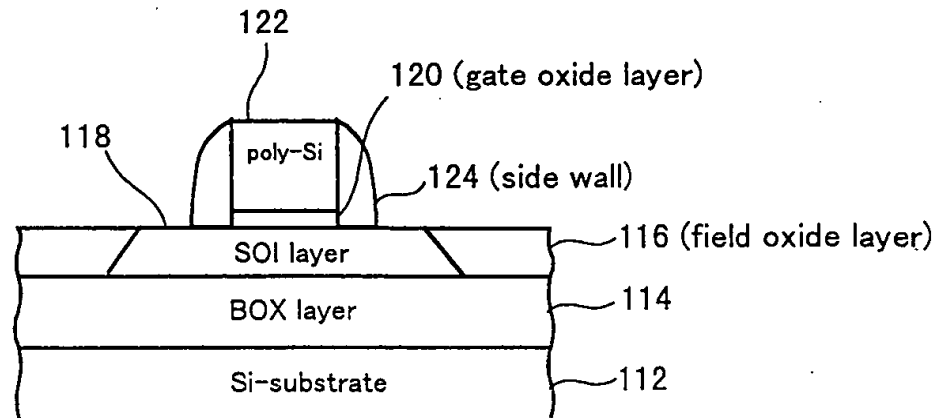
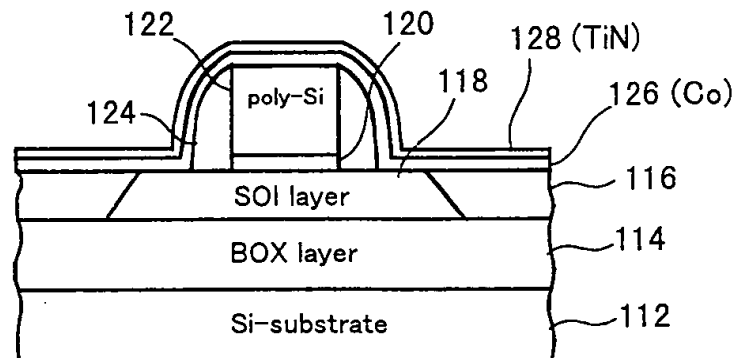


FIG. 2A



↓ Sputtering  
(TiN, Co)

FIG. 2B



↓ 1st RTA

FIG. 2C

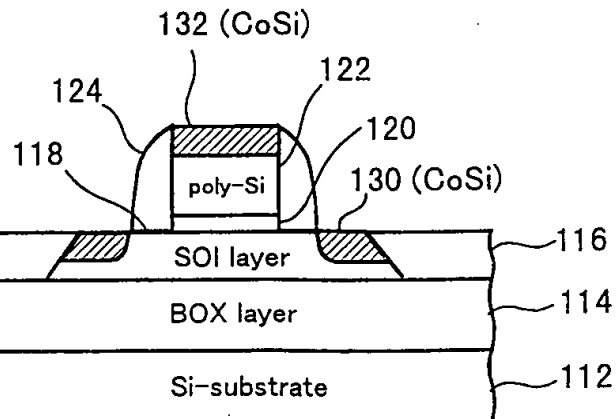
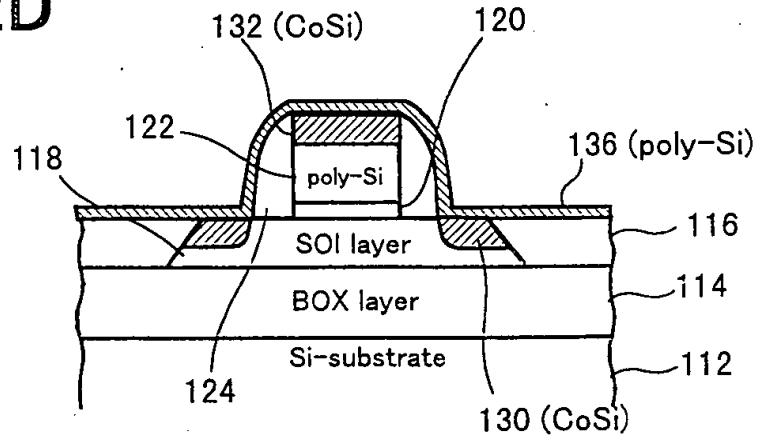


FIG. 2D



↓ 2nd RTA

FIG. 2E

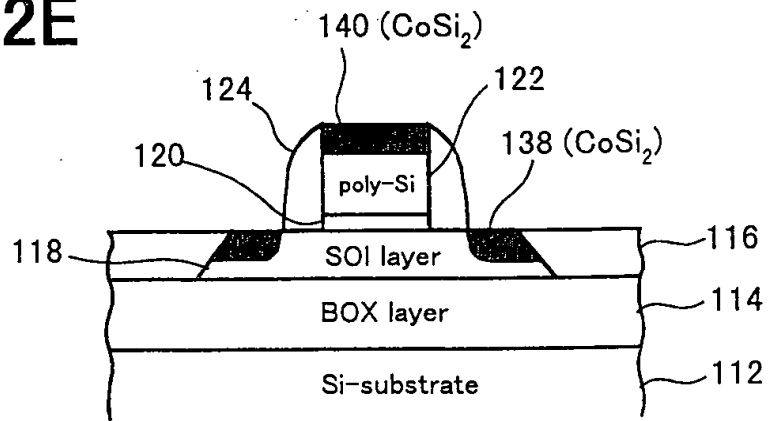
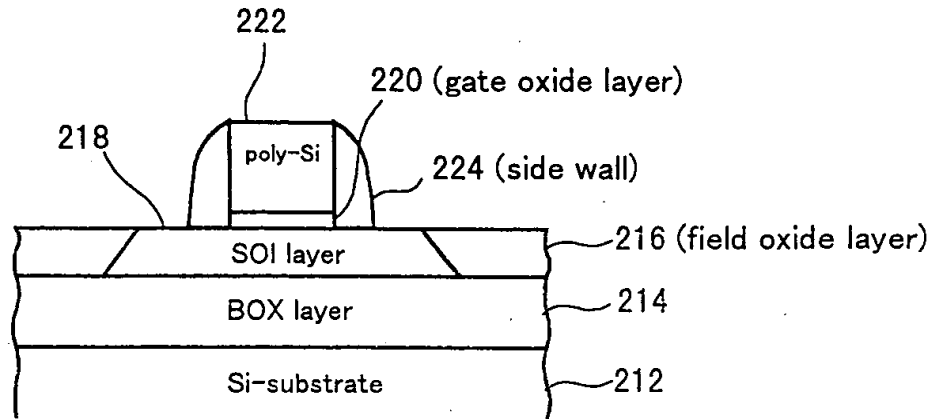
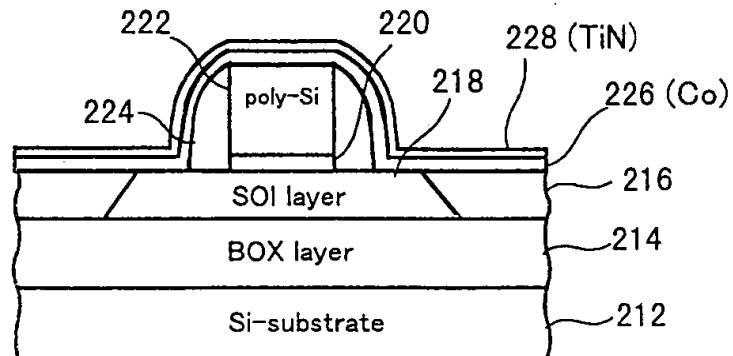


FIG. 3A



↓ Sputtering  
(TiN, Co)

FIG. 3B



↓ 1st RTA

FIG. 3C

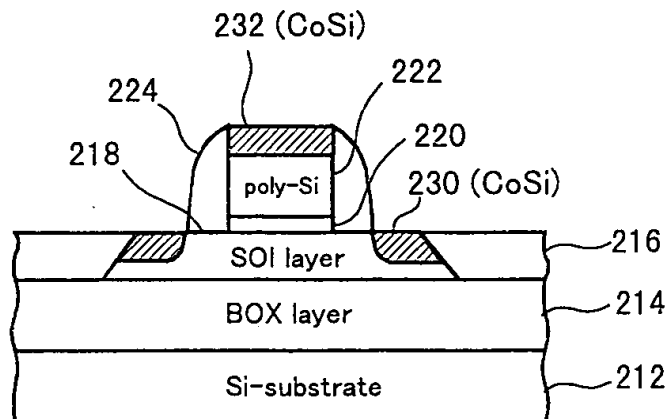


FIG. 3D

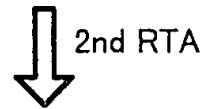
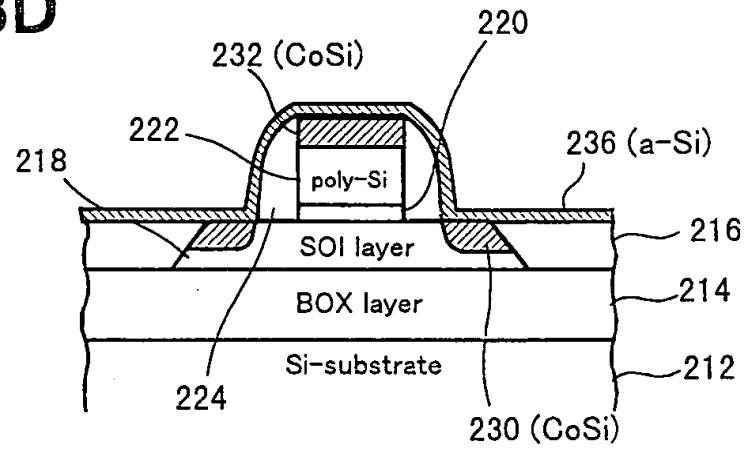


FIG. 3E

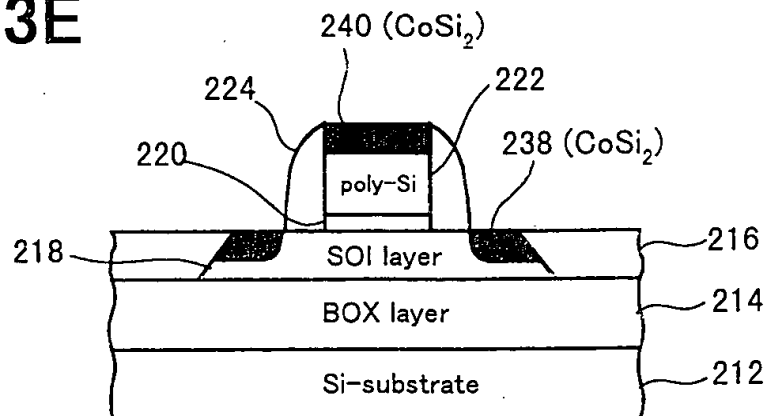
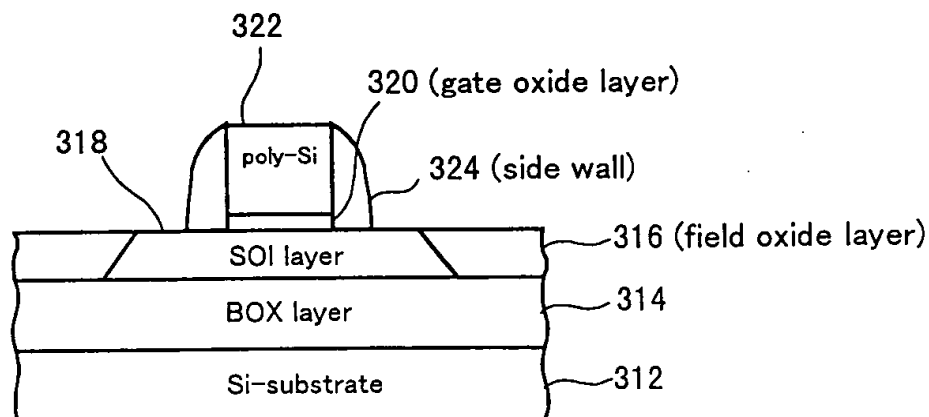
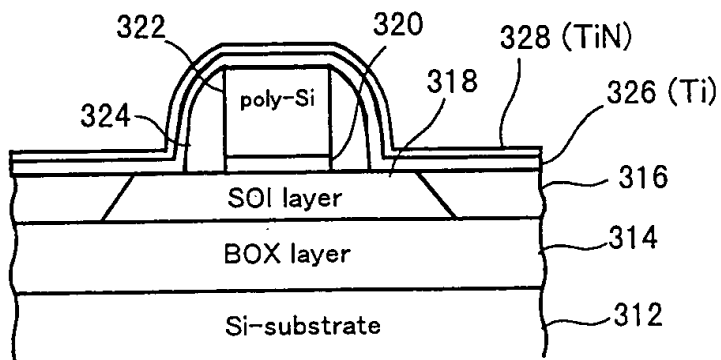


FIG. 4A



↓ Sputtering  
(TiN, Co)

FIG. 4B



↓ 1st RTA

FIG. 4C

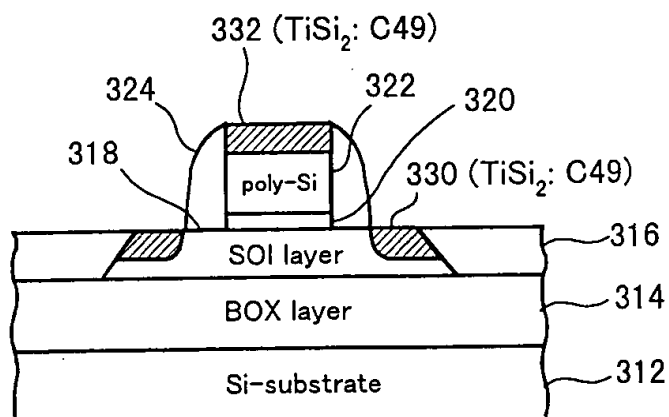
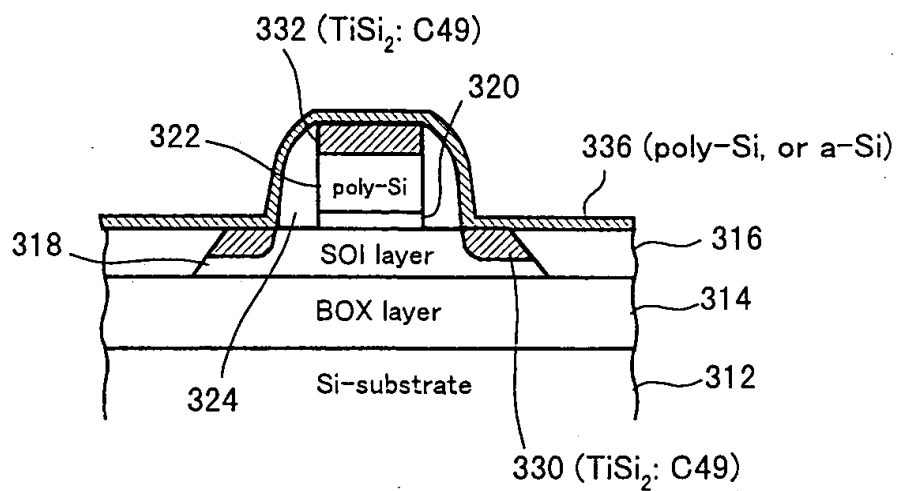


FIG. 4D



↓ 2nd RTA

FIG. 4E

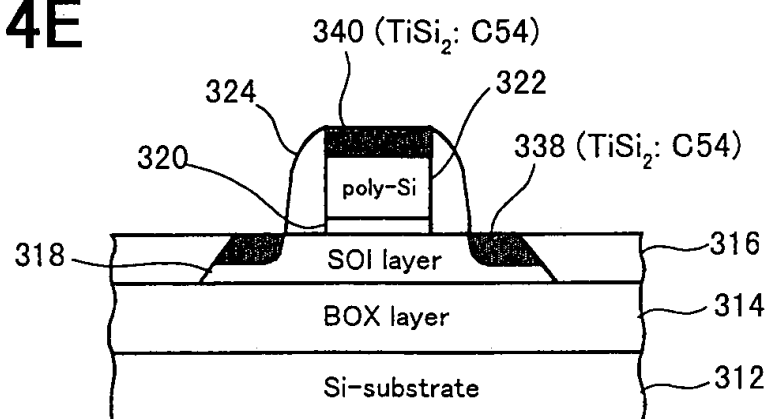


FIG. 5A

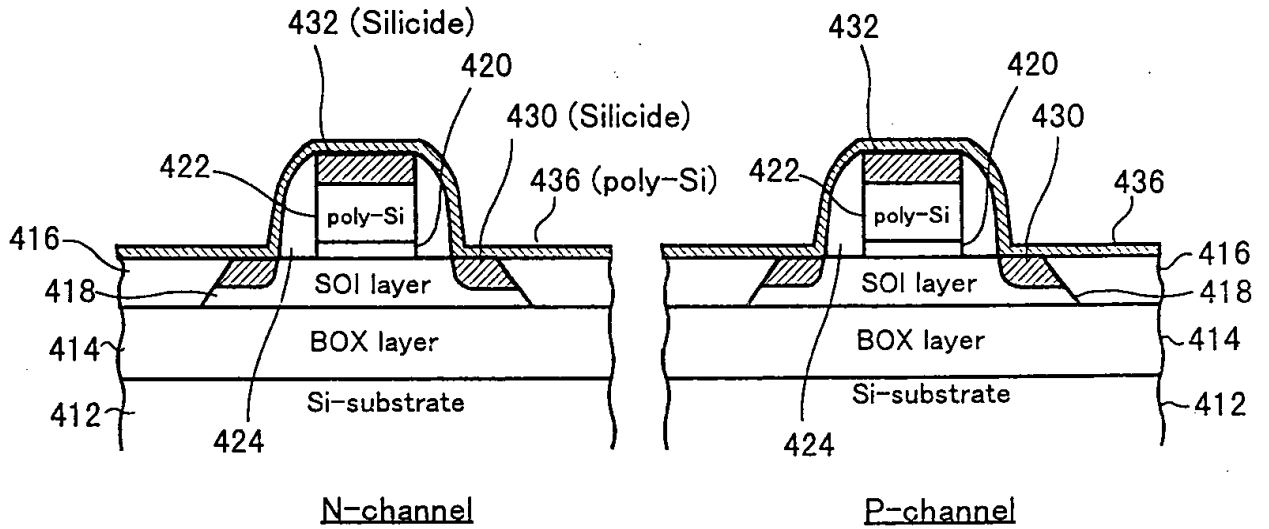


FIG. 5B

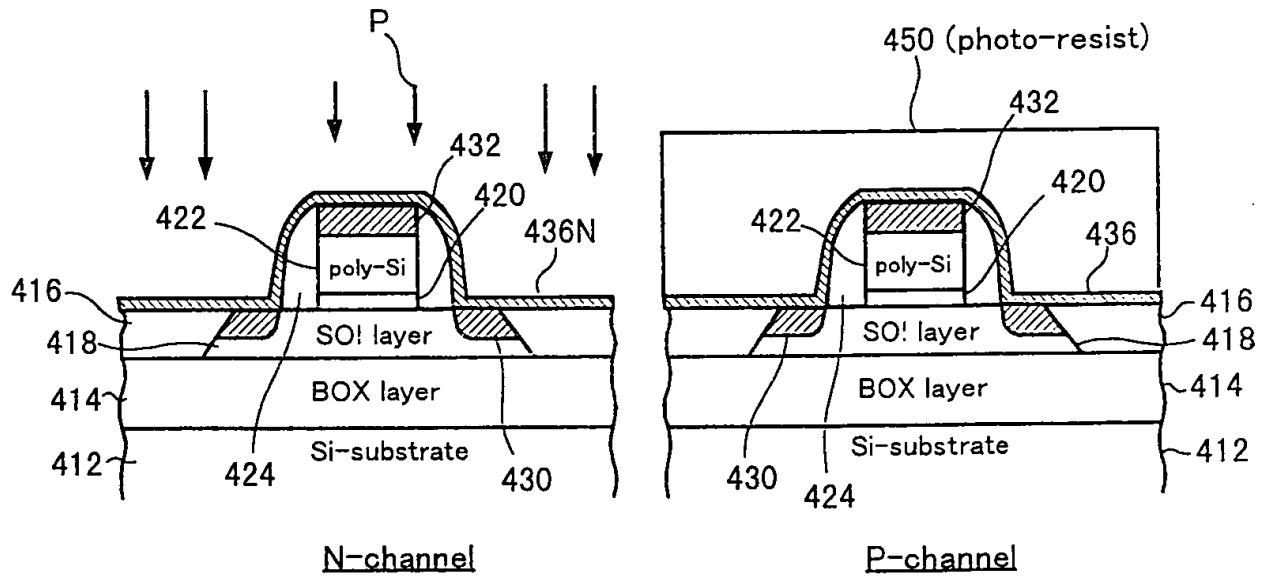
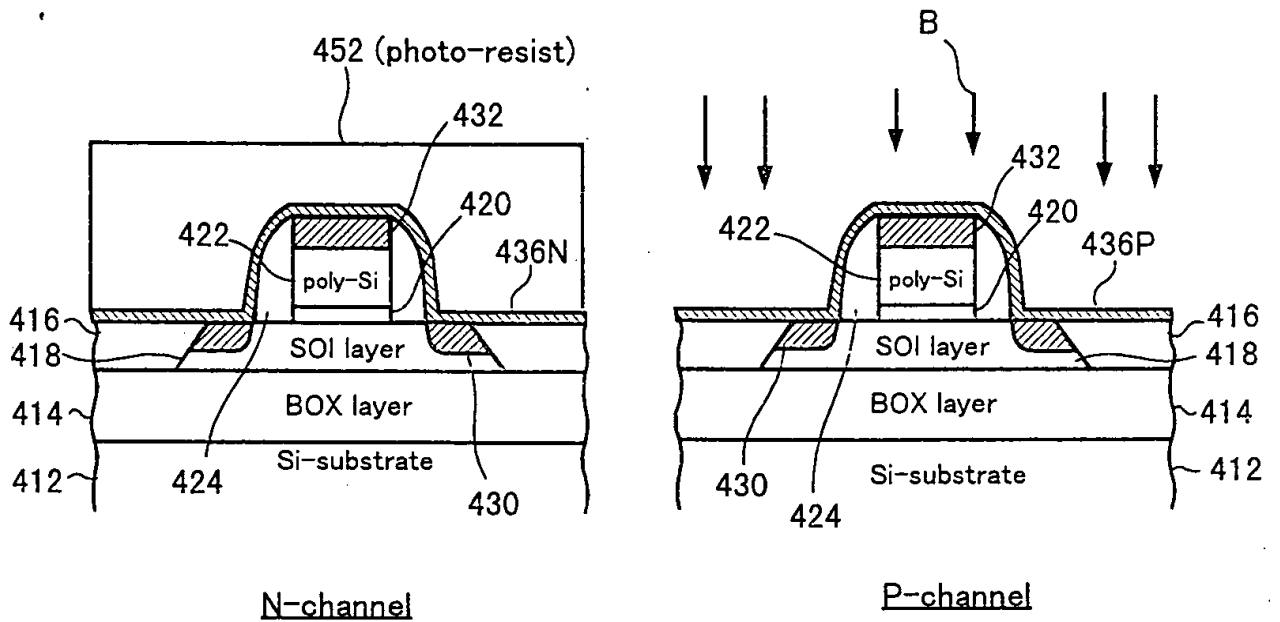


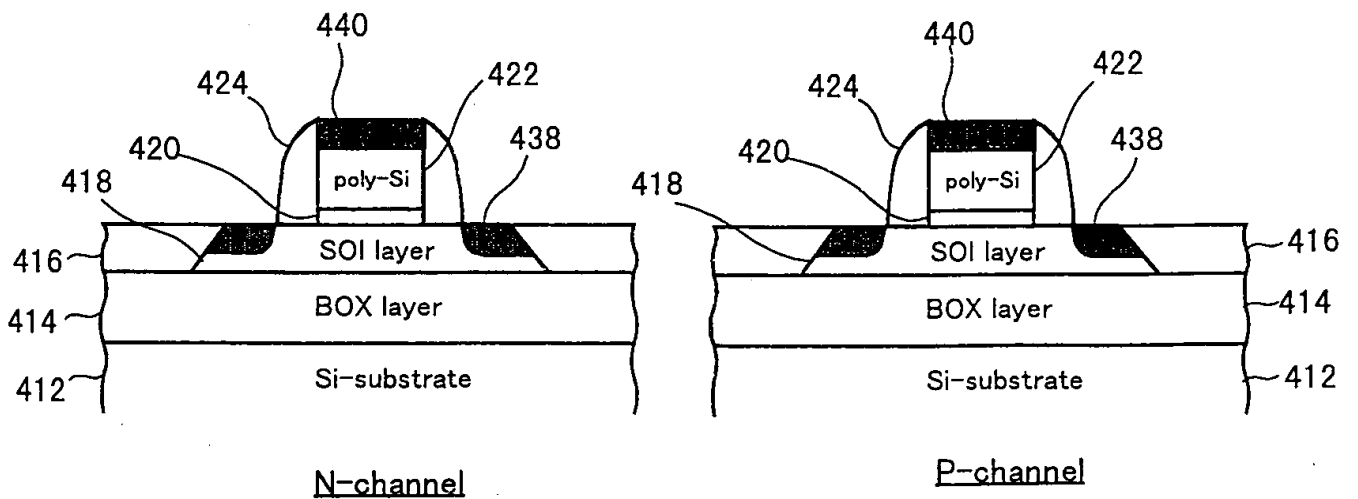


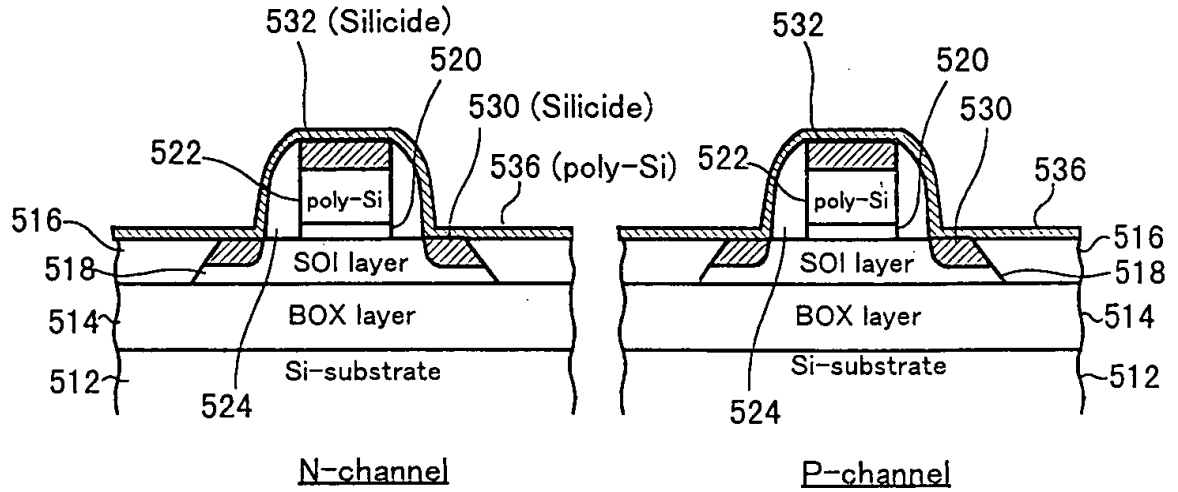
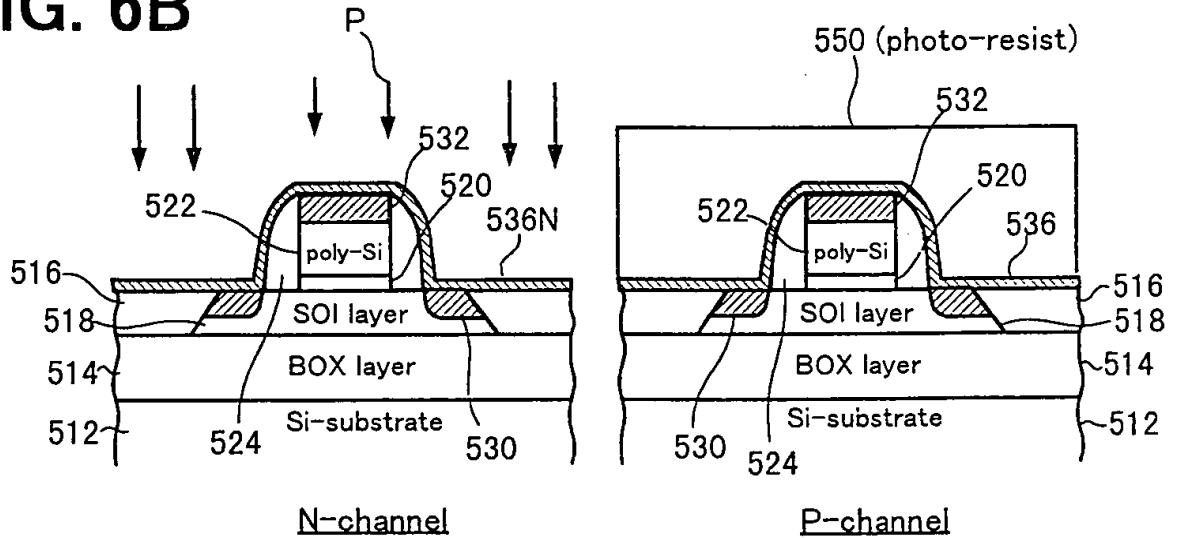
FIG. 5C



↓ 2nd RTA

FIG. 5D



**FIG. 6A****FIG. 6B****FIG. 6C**